

PATENT ABSTRACTS OF JAPAN

(11) Publication number : 2000-090619

(43) Date of publication of application : 31.03.2000

(51)Int.Cl. G11B 23/00

(21) Application number : 10-259944

(71)Applicant : SONY CORP

(22) Date of filing : 14.09.1998

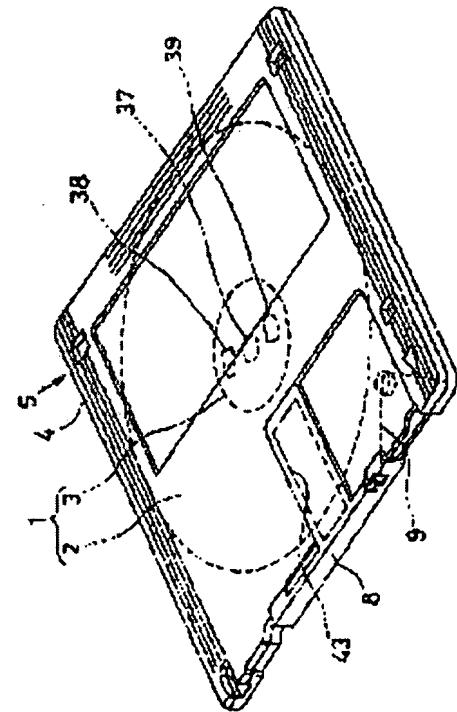
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(54) DISK-SHAPED RECORDING MEDIUM AND DISK CARTRIDGE

(57) Abstract:

PROBLEM TO BE SOLVED: To prevent the center of gravity of a disc-shaped recording medium from being displaced from the center by a drive hole part provided to a circumferential part of a center core.

SOLUTION: A disc-shaped recording medium 1 has a recording medium main body 2 and a center core 3 set to a center part of the recording medium main body 2. The center core 3 has a hole part 37 at a center part to which a rotary shaft of a disk drive apparatus is inserted, and a drive hole part 38 at a circumferential part. Moreover, the center core has a hole part 39 for adjusting the position of the center of gravity to set the center of gravity of the core to the central part.



LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of

rejection]

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[Date of extinction of right]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the disk cartridge constituted by holding a disc-like record medium and this disc-like record medium in shell pivotable.

[0002]

[Description of the Prior Art] As shown in drawing 13, it has the pin center, large core 103 attached in the center section of the body 102 of a record medium which prepared the signal Records Department, and this body 102 of a record medium as the above-mentioned disc-like record medium 101, and what formed the pore 104 for center-of-rotation shaft insertion by which the center-of-rotation shaft (spindle shaft) of disk drive equipment is inserted in the center section of this pin center, large core 103, and formed the pore 105 for a drive in the periphery is known. The above-mentioned disc-like record medium 101 is held free [rotation] in shell (cartridge body) 106, and is constituted as a disk cartridge 107.

[0003] Chucking of the above-mentioned disc-like record medium 101 is carried out to the disk table 201 of disk drive equipment by the magnetism of a magnet 202, as shown in drawing 14, the drive pin 204 prepared in the above-mentioned disk table 201 invades in the pore 105 for the above-mentioned drive, and it rotates with the above-mentioned disk table 201 while the medial axis (spindle shaft) 203 prepared in the center section of the above-mentioned disk table 201 invades in the pore 104 for the above-mentioned center-of-rotation shaft insertion.

[0004]

[Problem(s) to be Solved by the Invention] By the way, the above-mentioned conventional disc-like record medium 101 had the fault which is described below.

[0005] (1) by the pore 105 for a drive prepared in the periphery of the pin center, large core 103, since the location of the center of gravity of the pin center, large core 103 thru/or the disc-like record medium 101 shifts from a pin center, large, when the above-mentioned disc-like record medium 101 rotates, the so-called rotation Bure occurs, the truck location for record shifts, the record and the playback to the body 102 of a record medium become impossible, or the incidence rate of an error becomes high -- obtaining -- **

[0006] (2) In case the pore 105 for a drive carries out press molding of the pin center, large core 103 for one piece, metal mold will extract, balance will worsen, and the flat nature of installation datum-level 103a to the disk table 201 of the pin center, large core 103 will get worse.

[0007] This invention is made for the purpose of solving the above-mentioned conventional fault.

[0008]

[Means for Solving the Problem] This invention is equipped with the body of a record medium, and the pin center, large core attached in the center section of this body of a record medium. The above-mentioned pin center, large core In the disc-like record medium which has a pore for center-of-rotation shaft insertion in the center section, and has a pore for a drive in a periphery The center-of-gravity location of the above-mentioned disc-like record medium is set as the core of the above-mentioned pin center, large core, and it enables it to control rotation Bure of the above-mentioned disc-like record medium to the above-mentioned pin center, large core by preparing the pore for the center-of-gravity justification for setting a core center of gravity as a center section.

[0009]

[Embodiment of the Invention] Drawing 1 - 7 show the gestalt of operation. The disc-like record medium 1 of this invention is equipped with the body 2 of a record medium, and the pin center, large core 3 attached in this body 2 of a record medium, is held in shell 4 pivotable, and is constituted as a floppy disk cartridge 5.

[0010] As shown in drawing 3, with the magnetic sheet, the above-mentioned body 2 of a record medium is

constituted as a magnetic disk, and has the pin center,large core installation hole 21 in the center section. the above-mentioned pin center,large core 3 performs press working of sheet metal to a magnetic metal plate -- while being formed in the shape of [which has a flange] a closed-end cylinder and inserting the closed-end body 31 in the pin center,large core installation hole 21 of the above-mentioned body 2 of a record medium, it is attached in the above-mentioned body 2 of a record medium by laying a flange 32 on top of the top face of the above-mentioned body 2 of a record medium, and pasting up with adhesives 33.

[0011] As shown in drawing 4 -6, while the center section of the base 34 of the closed-end body 31 of the above-mentioned pin center,large core 3 is the installation datum level 35 to the disk table 201 of disk drive equipment, the periphery is the field 36 which projects caudad rather than the above-mentioned installation datum level 35 adsorbed [magnet].

[0012] The pore 37 for center-of-rotation shaft insertion is formed in the center section of the above-mentioned installation datum level 35, and the pore 38 for a drive and the pore 39 for the center-of-gravity justification for setting the center of gravity of the disc-like record medium 1 as the center section of the pin center,large core 3 are formed in it at the periphery so that the above-mentioned installation datum level 35 and the field 36 adsorbed [magnet] may be straddled.

[0013] The pores 39 for the above-mentioned center-of-gravity justification are the pore 38 for the above-mentioned drive, isomorphism, and Doshisha University, and are formed with the phase of 180 degrees on the same periphery as the pore 38 for the above-mentioned drive focusing on the pore 37 for the above-mentioned center-of-rotation shaft insertion.

[0014] As shown in drawing 3 , the above-mentioned shell 4 consists of an upper half 41 and a bottom half 42. The above top half 41 has the opening 43 for record playback which makes the top face of the above-mentioned body 2 of a record medium overlook outside. Moreover, the bottom half 42 of the above has the opening 44 for record playback which makes the inferior surface of tongue of the above-mentioned body 2 of a record medium overlook outside, and the opening 45 for a drive which makes the base 34 of the above-mentioned pin center,large core 3 overlook outside.

[0015] The above-mentioned shell 4 arranges liners 6 and 7 on the above-mentioned body 2 of a record medium, and to the bottom, and is formed by combining the bottom halves 41 and 42 on the above, where the body 2 of these record media and liners 6 and 7 are inserted.

[0016] The shutter 8 which opens and closes the openings 43 and 44 for the above-mentioned record playback is attached in the above-mentioned shell 4 possible [a slide]. The above-mentioned shutter 8 is energized in the direction which twists and closes the above-mentioned openings 43 and 44 by the coil spring 9.

[0017] The disc-like record medium 1 and disk cartridge 5 of a gestalt of operation If it is the above configurations and disk drive equipment is loaded with the above-mentioned disk cartridge 5 As shown in drawing 7 , magnetic attraction of the above-mentioned pin center,large core 3 is carried out to the disk table 201 with a magnet 202. The medial axis (spindle shaft) 203 of the above-mentioned disk drive equipment is inserted in the pore 37 for the above-mentioned center-of-rotation shaft insertion. The drive pin 204 is inserted in the pore 38 for the above-mentioned drive, or the pore 39 for center-of-gravity justification, and magnet chucking will be carried out to the disk table 201 by the above-mentioned disc-like record medium 1.

[0018] Though the location of the pore 38 the above-mentioned drive pin 204 and for the above-mentioned drive or the pore 39 for center-of-gravity justification has shifted at the time of the above-mentioned magnetic attraction, if the above-mentioned disk table 201 rotates, it invaded into the pore 38 for the above-mentioned drive, or the pore 39 for center-of-gravity justification, and chucking will be completely carried out by the above-mentioned drive pin 204. In this case, the pore 38 for the above-mentioned drive and the pore 39 for center-of-gravity justification will surely invade into the pore 38 for the above-mentioned drive, or the pore 39 for center-of-gravity justification, if at least 180 degrees of the above-mentioned drive pins 204 rotate, since it has the phase of 180 degrees and is arranged.

[0019] Drawing 8 shows the 1st modification of the pin center,large core 3. In this modification, two pores 39 for the above-mentioned center-of-gravity justification are arranged with the phase of 120 degrees to the pore 38 for the above-mentioned drive. Therefore, though the location of the pore 38 the above-mentioned drive pin 204 and for the above-mentioned drive or the pore 39 for center-of-gravity justification has shifted at the time of the above-mentioned magnetic attraction If at least 120 degrees of the above-mentioned drive pins 204 rotate, it will surely invade into either the pore 38 for the above-mentioned drive, or two pores 39 for center-of-gravity justification. The above-mentioned drive pin 204 can be made to invade into the pore 38 for the above-mentioned drive, or the pore 39 for center-of-gravity justification more quickly than the case where the pore 38 for the above-mentioned drive and the pore 39 for center-of-gravity justification have been arranged with the phase of 180 degrees.

[0020] Drawing 9 shows the 2nd modification of the pin center,large core 3. In this modification, the case where three

pores 39 for center-of-gravity justification are formed is shown to one pore 38 for a drive. The one above-mentioned pore 38 for a drive and three pores 39 for the above-mentioned center-of-gravity justification have the phase of 90 degrees mutually, and are arranged. Therefore, though the location of the pore 38 the above-mentioned drive pin 204 and for the above-mentioned drive or the pore 39 for center-of-gravity justification has shifted at the time of the above-mentioned magnetic attraction If at least 90 degrees of the above-mentioned drive pins 204 rotate, it will surely invade into either the pore 38 for the above-mentioned drive, or three pores 39 for center-of-gravity justification. The above-mentioned drive pin 204 can be made to invade into the pore 38 for the above-mentioned drive, or the pore 39 for center-of-gravity justification more quickly than the case where the pore 38 for the above-mentioned drive and the pore 39 for center-of-gravity justification have been arranged with the phase of 120 degrees.

[0021] Drawing 10 -12 show the 3-5th modifications of the pin center,large core 3. these modifications -- setting -- the pore 39 for the above-mentioned center-of-gravity justification -- the pore 38 for the above-mentioned drive -- a facet -- more than one are formed in the location which is a product and carries out abbreviation opposite through the pore 37 for the above-mentioned center-of-rotation shaft insertion.

[0022] total of the area of the pore 39 for two or more above-mentioned center-of-gravity justification -- the area of the pore 38 for the above-mentioned drive, and abbreviation -- it is set as the equal value.

[0023] The pore 39 for two or more above-mentioned center-of-gravity justification may be circular, or a rectangle is sufficient as it, and it does not ask the configuration. Moreover, what is necessary is not to ask the number, either, but to maintain balance in weight with the pore 38 for the above-mentioned drive in short, and just to be able to set a center-of-gravity location as the center section of the pin center,large core 3.

[0024] The pore 39 for two or more above-mentioned center-of-gravity justification is formed in the configuration which cannot insert the drive pin 204 of disk drive equipment. In the gestalt of implementation of *** and the above first, as a disc-like record medium 1, although the magnetic disk was shown, the disc-like record medium 1 may be a magneto-optic disk or an optical disk.

[0025]

[Effect of the Invention] There is effectiveness which is described below in this invention.

[0026] (1) The disc-like record medium of claim 1 can compensate gap of the center-of-gravity location by having prepared the pore for a drive in the pin center,large core with the pore for center-of-gravity justification, and can prevent rotation Bure of a disc-like record medium to whom gap of a center-of-gravity location takes place owing to. Moreover, the metal mold at the time of carrying out press molding of the pin center,large core extracts, balance becomes good, and the flat nature of installation datum level improves.

[0027] (2) The disc-like record medium of claim 2 can give the function as a pore for a drive to the pore for center-of-gravity justification. Especially the pore for a drive and the pore for center-of-gravity justification Since it is arranged with the phase of 90 degrees, 120 degrees, or 180 degrees the time of chucking (at the time of magnetic attraction) -- the above-mentioned drive pin -- straight -- the pore for the above-mentioned center-of-gravity justification, or the business of a drive, even if it does not go into a pore If at least 120 degrees - the 180 degrees of the above-mentioned drive pins rotate, it can surely invade into the pore for the above-mentioned drive, or the pore for center-of-gravity justification, and the above-mentioned drive pin can be introduced into the pore for the above-mentioned drive, or the pore for center-of-gravity justification more quickly than the case where one pore for a drive is prepared in a pin center,large core.

[0028] (3) the disc-like record medium of claim 3 -- one pore for a drive -- receiving -- this -- a facet -- since the pore for two or more center-of-gravity justification of a product was distributed and it has arranged, compared with the case where one pore for center-of-gravity justification of a large area is formed, it can prevent the mechanical strength of a pin center,large core being able to weaken.

[0029] (4) At the time of chucking (at the time of magnetic attraction), the above-mentioned drive pin can prevent invading into the pore for center-of-gravity justification, and the disc-like record medium of claim 4 can introduce a drive pin into the pore for a drive certainly.

[0030] (5) The disk cartridge of claim 5 can protect a disc-like record medium by shell. Moreover, gap of the center-of-gravity location by having prepared the pore for a drive in the pin center,large core can be compensated with the pore for center-of-gravity justification, and rotation Bure of a disc-like record medium to whom gap of a center-of-gravity location takes place owing to can be prevented.

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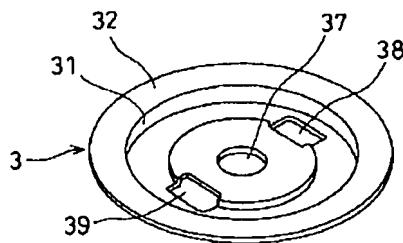
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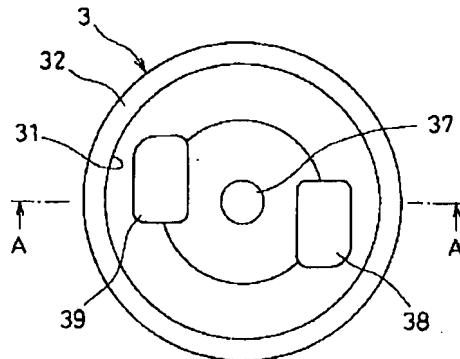
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DRAWINGS

[Drawing 4] センターコアの斜視図

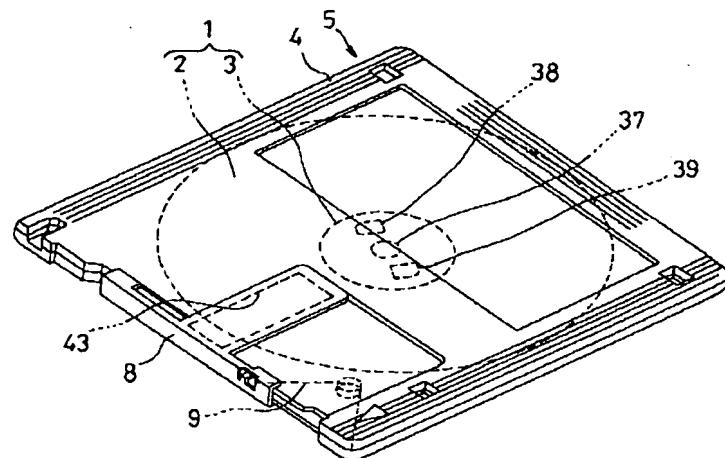


[Drawing 5] センターコアの平面図



[Drawing 1]

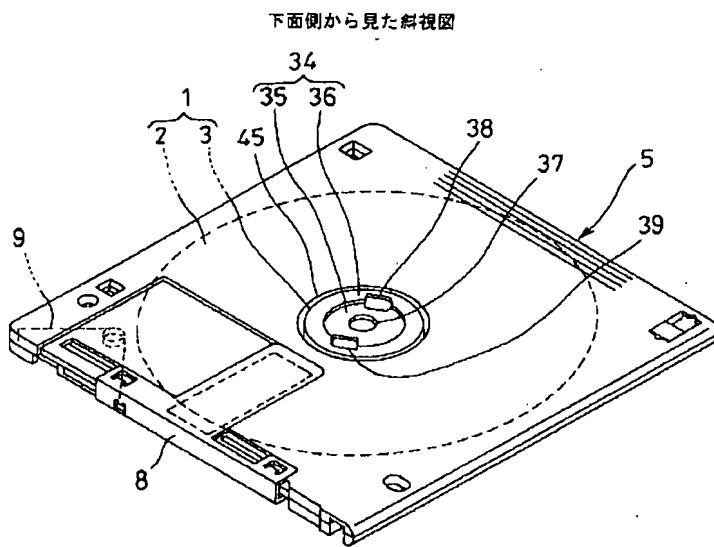
本発明の円盤状記録媒体を使用した
ディスクカートリッジの斜視図



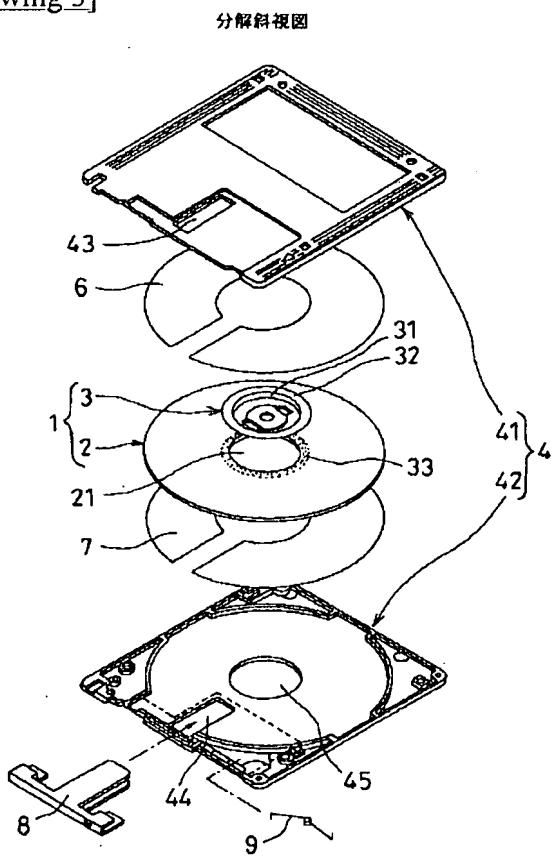
1…円盤状記録媒体
2…記録媒体本体
3…センターコア

3 7…回転中心軸
3 8…駆動用の孔部
3 9…重心位置調整用の孔部

[Drawing 2]

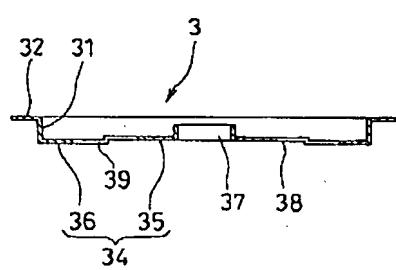


[Drawing 3]

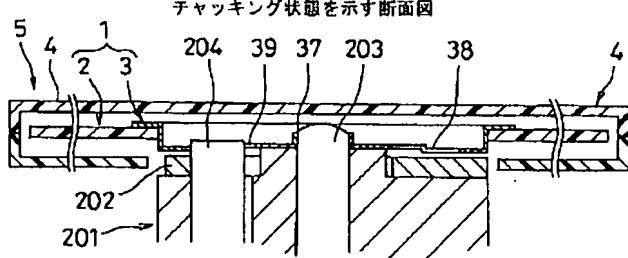


[Drawing 6]

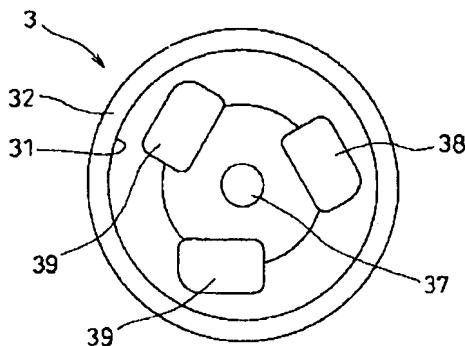
図5のA-A線断面図



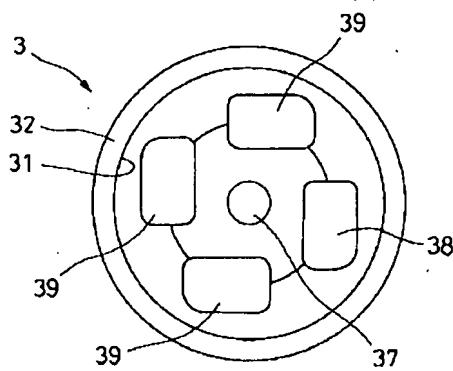
[Drawing 7] チャッキング状態を示す断面図



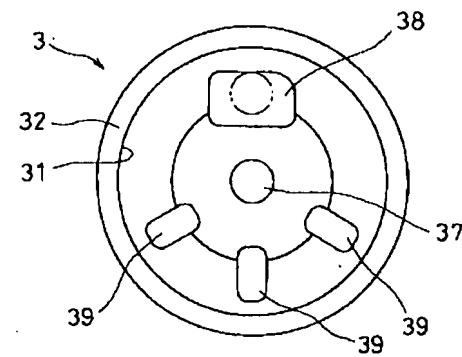
[Drawing 8] センターコアの変形例を示す平面図



[Drawing 9] センターコアの変形例を示す平面図

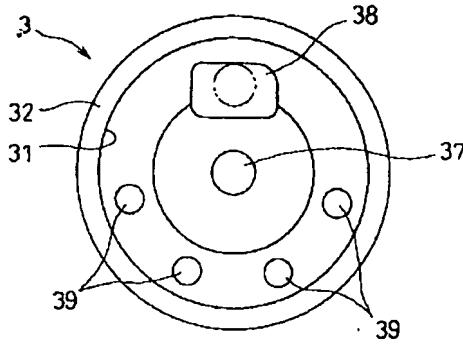


[Drawing 10] センターコアの変形例を示す平面図



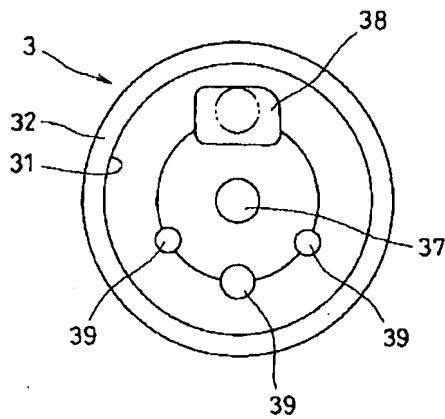
[Drawing 11]

センターコアの変形例を示す平面図

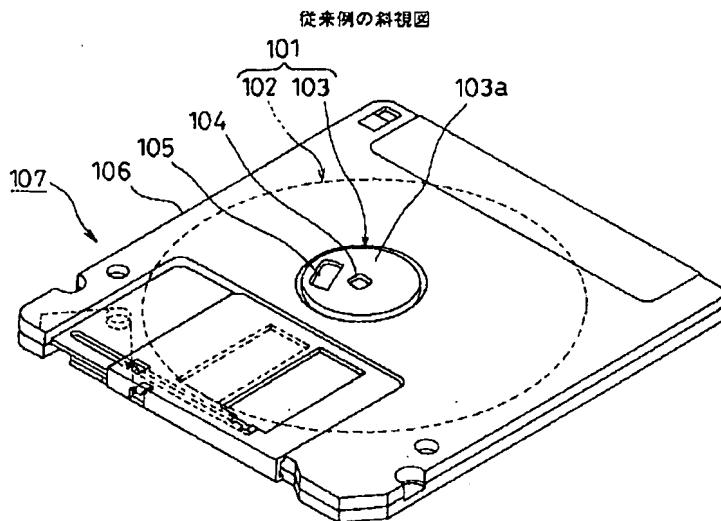


[Drawing 12]

センターコアの変形例を示す平面図

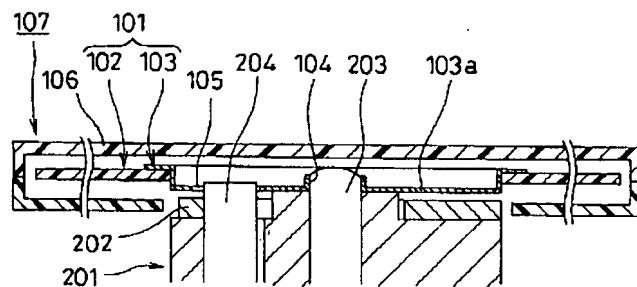


[Drawing 13]



[Drawing 14]

従来例の断面図



[Translation done.]